UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAY 0 6 2014

CERTIFIED MAIL 7012 1010 0002 0759 6854
RETURN RECEIPT REQUESTED

The Honorable Percy Bland
Mayor, City of Meridian
601 23rd Avenue
Meridian, Mississippi 39302

Re: U.S. Environmental Protection Agency and Mississippi Department of Environmental Quality Compliance Evaluation Inspection
Notice of Violation, Notice of Opportunity to Show Cause and Information Request
National Pollutant Discharge Elimination System Permit Nos.: MS0020117 and MS0055735
Meridian South Publically Owned Treatment Works and Meridian East Publically Owned Treatment Works

Dear Mayor Bland:

On April 8 – 9 2014, the U.S. Environmental Protection Agency Region 4 and the Mississippi Department of Environmental Quality (MDEQ) conducted a Compliance Evaluation Inspection (CEI) of the City's Wastewater Collection and Transmission System (WCTS) associated with the Meridian South Wastewater Treatment Plant (South WWTP) and the Meridian East Wastewater Treatment Plant (East WWTP) and also performed a Reconnaissance Inspection on the City's South WWTP. The objective of this CEI was to assess the City's compliance with the Clean Water Act (CWA) and the City's National Pollutant Discharge Elimination System (NPDES) permits. Additionally, the EPA evaluated the City's Management, Operations and Maintenance Programs related to its WCTS and assessed the overall condition of the South WWTP. The inspection results are summarized in the enclosed inspection report.

During the CEI, the City provided the EPA with information gathered from its Wastewater Division customer complaint database. The EPA has several questions regarding the database, which are outlined below. The EPA also has questions outlined below regarding Sanitary Sewer Overflows (SSOs).

1. Please provide the date and street address for the works orders provided to the EPA during the CEI from January 2011 to present.

2. What does the "Line Numb" column represent in the spreadsheet submitted to the EPA during the CEI?

3. For purposes of this Information Request, a sanitary sewer overflow (SSO) is an overflow, spill, release, or diversion of wastewater from the sanitary sewer system. SSOs include overflows or releases of wastewater that reach waters of the U.S.; overflows or releases of wastewater that do not reach waters of the U.S.; and wastewater backups into buildings that are caused by blockages

or flow conditions in a sanitary sewer other than a building lateral. Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned is not an SSO.

Provide a listing of all SSOs that occurred from September 2008 to the present. For each SSO provide the following:

a. Date(s) of the SSO;
b. Time (and Date if other than a. above) when the City was notified that the SSO event occurred;
c. Time (and Date if other than a. above) when the City (or contractor) crew responded to the SSO;
d. Time (and Date if other than a. above) when the SSO ceased;
e. Time (and Date if other than a. above) when corrective action was completed;
f. Location of the SSO, including source (pump station, manhole, etc.);
g. Ultimate destination of the SSO, such as surface waterbody (by name, if available), storm drain leading to surface waterbody (by name, if available), dry land, building, etc.;
h. Volume of the SSO;
i. Cause of the SSO such as grease, roots, other blockages, wet weather (infiltration and inflow), loss of power at pump station, pump failure, etc.;
j. Corrective actions taken to stop the SSO; and
k. Corrective actions taken to prevent this or similar SSOs in the future.

If available, please provide the above information in a Microsoft compatible spreadsheet

Pursuant to Section 308 of the CWA, 33 U.S.C. § 1318, the EPA hereby requests the City to provide the information set forth in the questions above. The City is required to respond to this information request, as well as the enclosed CEI report, within 30 days of its receipt of this letter. The response should be directed to:

Ms. Sara Schiff, Enforcement Officer
U.S. Environmental Protection Agency, Region 4
Clean Water Enforcement Branch
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

The City's response to this information request should specifically reference the particular question number of the request and should be organized for the purpose of clarity. In addition, all information submitted must be accompanied by the following certification signed by a responsible City official in accordance with 40 C.F.R. § 122.22:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Failure to comply with this information request may result in enforcement proceedings under Section 309 of the CWA, 33 U.S.C. § 1319, which could result in the judicial imposition of civil or criminal penalties or the administrative imposition of civil penalties. In addition, there is potential criminal liability for the falsification of any response to the requested information.

The City shall preserve, until further notice, all records (either written or electronic) which exist at the time of receipt of this letter that relate to any of the matters set forth in this letter. The term "records" shall be interpreted in the broadest sense to include information of every sort. The response to this information request shall include assurance that these record protection provisions were put in place as required. No such records shall be disposed of until written authorization is received from the Chief of the Clean Water Enforcement Branch at the U.S. EPA, Region 4.

Based upon review of information collected during this inspection, the EPA has determined that the City violated the CWA as follows:

1. During the period of November 24, 2010, through March 28, 2014, the City had 74 SSOs that discharged untreated sewage from the City's WCTS associated with either the South WWTP or the East WWTP, as recorded on SSO report records submitted by the City to MDEQ and obtained by the EPA. The EPA also observed SSOs during the CEI in three locations and several manholes located throughout the City along Sowashee Creek and the service road leading to the East WWTP that reached navigable waters of the U.S, as defined by Section 502 of the CWA, 33 U.S.C. § 1362. Such SSOs were not authorized by the NPDES permits. SSOs that reach waters of the U.S. are violations of Section 301(a) of the CWA, 33 U.S.C. § 1311(a).

2. SSOs that reach waters of the U.S. and SSOs that do not reach waters of the U.S. are also indicative of improver operation and maintenance of the WCTS. Therefore, the City is in violation of the South WWTP Permit No. MS0020117, Condition T-28 (Proper Operation, Maintenance and Replacement), which requires the City to operate and maintain all components of the system to achieve compliance with the conditions of the permit and Permit Condition T-29 (Duty to Mitigate), which requires the City to minimize or prevent discharges from the system.

3. The East WWTP is permitted under Permit No. MS0055735, which contains the same operation, maintenance and replacement and duty to mitigate requirements as the South WWTP, but contains different permit condition numbers. Therefore, the City is also in violation of the East WWTP's Permit Condition T-27 (Proper Operation, Maintenance and Replacement) and T-28 (Duty to Mitigate).

4. The City has also failed to perform basic maintenance requirements for the Meridian South Plant, in violation of the South WWTP's Permit Condition T-27 (Proper Operation, Maintenance and Replacement). Specifically, the weir to Clarifier 2 is allowing short circuiting of the treatment process due to damaged or broken weir plates in the clarifier and one Return Activated Sludge (RAS) line is not discharging RAS properly into an aeration basin due to a ruptured RAS pipe.

5. The City has also violated the effluent limitations in its Permits on numerous occasions as indicated by the effluent exceedances listed in Enclosure B.

Until compliance with the CWA is achieved, the City is considered to be in violation of the CWA and subject to enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319. This Section

provides for the issuance of administrative penalty and/or compliance orders and the initiation of civil and/or criminal actions.

To resolve the identified violations and discuss the EPA's possible enforcement actions, including the assessment of appropriate civil penalties, we request that representatives of the City contact Ms. Sara Schiff at (404) 562-9870 or via email at schiff.sara@epa.gov, within five business days of receipt of this letter to make arrangements for a conference. In lieu of appearing in the EPA's offices for this meeting, a telephone conference may be scheduled. The City's representatives should be prepared to provide all relevant information with documentation pertaining to the above violations including, but not limited to, any financial information, which may reflect the City's ability to pay a penalty. You have the right to be represented by legal counsel. Failure to appear may result in an immediate enforcement action against the City. The EPA may consider information provided during the meeting or telephone conference in any enforcement proceeding related to this matter.

If you should have any questions regarding this matter, please contact Ms. Sara Schiff. Legal inquiries should be directed to Ms. Tanya Floyd, Associate Regional Counsel, at (404) 562-9813 or via email at floyd.tanya@epa.gov.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosure

cc: Mr. Hugh Smith
City of Meridian

Mr. Chris Sanders
Mississippi Department of Environmental Quality

Mr. Les Herrington
Mississippi Department of Environmental Quality

# ENCLOSURE A

## Compliance Evaluation Inspection Report

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**Region 4**
**Water Protection Division**
**Clean Water Enforcement Branch**

# WASTEWATER COLLECTION AND TRANSMISSION SYSTEM COMPLIANCE EVALUATION INSPECTION AND WASTEWATER TREATMENT PLANT RECONNAISSANCE INSPECTION REPORT

**Public Works Department**
City of Meridian
Lauderdale County
Mississippi
NPDES Permit Nos. MS0055735 and MS0020117

**Facility Address:**
311 27th Avenue
Meridian, Mississippi 39302

**Inspection Date:**
April 8 - 9, 2014

**Inspectors:**
Dennis Sayre, EPA Region 4
Sara Schiff, EPA Region 4
Jim Harvey, MDEQ

**Inspection Report Prepared by:**
Dennis Sayre

April 18, 2014

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| CEI | Compliance Evaluation Inspection |
| CWA | Clean Water Act |
| DMR | Discharge Monitoring Report |
| EPA | United States Environmental Protection Agency |
| GIS | Geographic Information System |
| GPM | Gallons per Minute |
| I/I | Infiltration/Inflow |
| ICIS | Integrated Compliance Information System |
| MDEQ | Mississippi Department of Environmental Quality |
| NPDES | National Pollutant Discharge Elimination System |
| MGD | Million Gallons per Day |
| MOM | Management, Operation, and Maintenance |
| PS | Pump Station |
| SORP | Sewer Overflow Response Plan |
| SSO | Sanitary Sewer Overflow |
| WCTS | Wastewater Collection and Transmission System |
| WWTP | Wastewater Treatment Plant |

## I. OVERVIEW

The Meridian Public Works Department consists of seven divisions: Engineering, Construction, Administration, Environmental, Business Operations, Water, and Wastewater. The Wastewater Division provides sanitary sewer services for residential, commercial and industrial entities within the City of Meridian (the City) and receives domestic wastewater from Meridian Naval Air Station, Key Field Air National Guard Base, the City of Marion (Population: approximately 1500), and the East Mississippi Correctional Facility that lies outside the Meridian city limits. The Wastewater Division is responsible for the operation and maintenance of two wastewater treatment facility, approximately 330 miles of sewer gravity line and force mains, 66 pump stations and other sewer related appurtenances serving approximately 40,800 residential customers within the city limits.

In March 2014, the Clean Water Enforcement Branch, EPA Region 4 received a citizen's complaint with photographic evidence and location descriptions that described a series of illicit discharges originating from the City's wastewater collection and transmission system (WCTS). Subsequently, the EPA conducted a Compliance Evaluation Inspection (CEI) of the City's sewer system on April 8 through April 9, 2014. The purpose of this CEI was to evaluate compliance with the CWA as it relates to Sanitary Sewer Overflows (SSOs) from the WCTS and to assess the City's Management, Operations and Maintenance (MOM) programs. Additionally, the purpose of this compliance inspection was to substantiate the citizen's complaint and to examine the causes and potential corrective actions for SSOs from the WCTS.

On April 8, 2014 the EPA conducted an independent reconnaissance inspection as a pre-requisite site visit of locations identified in the citizen's complaint. The City experienced 1.61 inches of rain on April 7$^{th}$ and 0.47 inches of rain on April 8$^{th}$, according to Key Field Airport data. The EPA photographed several SSOs on April 8$^{th}$. On April 9$^{th}$, the EPA and the Mississippi Department of Environmental Quality (MDEQ) conducted a CEI with the City, which the EPA requested written documentation of any MOM programs that the City may use to operate and maintain the WCTS. The EPA also discussed inspection and maintenance records, interviewed management personnel and visited various sites in the WCTS, including some of the SSOs that were sighted the previous day, and two pump stations. This report describes EPA's findings, identifies areas of concern and presents preliminary recommendations.

## II. OBJECTIVES

The specific objectives of the inspection were to assess the City's compliance with the CWA, evaluate reported SSOs, assess the MOM programs, where implemented, and to examine the causes of SSOs in the City's sewer system.

## III. INVESTIGATION METHODS

The investigation included:

- Review of citizen's complaint;
- Review of the Integrated Compliance Information System - National Pollutant Discharge Elimination System (ICIS-NPDES) federal database, state documents and the NPDES Permit;
- Interviews with the City's Wastewater Division personnel and Public Works Director; and,
- Visual inspection.

## IV. REGULATORY SUMMARY

The MDEQ is authorized under the CWA to implement the NPDES program in Mississippi. The Meridian South Wastewater Treatment Plant (South Plant) is authorized under MDEQ's NPDES Permit No. MS0020117 (the South Permit) and the Meridian East Plant (East Plant) is authorized under the NPDES Permit No. MS0055735 (the East Permit) to discharge treated sewage into Sowashee Creek. The City is currently transitioning to a 100% re-use system by supplying 100% (or near 100%) of the flow from the combined South Plant and East Plant flow to be used as cooling water for the Southern Company power plant currently under construction in Kemper County. The East Plant outfall has been diverted to the South Plant for mixing and eventual discharge to a Southern Company power plant; however, the combined flow is currently being discharged into Sowashee Creek using the South Plant outfall until such time that the power plant construction is completed and capable of accepting flow from the City. The MDEQ is working to combine the South Plant and East Plant permits into one permit. Both NPDES permits are currently valid. Estimated tie-in, according to Meridian officials, is August 2014. The South Plant and the East Plant are both major dischargers with a combined permitted capacity of 14 million gallons per day (MGD).

The Sowashee Creek is a major tributary of the Pascagoula River in the Pascagoula River Basin and is listed on Mississippi's 2010 and 2012 303(d) list as impaired for Nitrogen and Phosphorus. MDEQ has also developed Total Maximum Daily Loads (TMDLs) for Sowashee Creek to address previous 303(d) listed impairments; including a Sedimentation TMDL and an Organic Enrichment/ Low Dissolved Oxygen TMDL.

SSOs are prohibited discharges based on Sections 301 and 402 of the CWA which generally prohibit the discharge of pollutants by any person unless authorized by an NPDES permit. The East Permit Condition No.T-27 and the South Permit Condition No. T-28 requires the City to minimize or prevent discharges. The East Permit Condition No.T-28 and the South Permit Condition No. T-29 also requires the City to operate and maintain all components of the system to achieve compliance with the conditions of the permit.

## V. INSPECTION SUMMARY AND FINDINGS

The EPA performed a pre-inspection evaluation and an on-site inspection of the WCTS. The pre-inspection evaluation of the City's WCTS consisted of examining historic records submitted by the City. This section will provide a summary of both means of inspection as well as any recommendations to the City to improve the WCTS performance.

### A. Management Interview

The EPA met with the City's Director of Public Works (the Director), the Utility Line Superintendent, and a MDEQ staff member at 8:00 a.m., April 9, 2014, at the City's Public Works office. Topics of discussion during the meeting included the use and documentation of any MOM programs, including Mapping, Sewer Overflow Response Plan (SORP), Preventive Maintenance Programs, Operations Programs, Continuous Sewer System Assessment Program (CSSAP), Capacity Assurance Program, and Fats, Oil, and Grease (FOG) Control. The EPA also discussed SSOs that the City may be experiencing, citizen complaints and record keeping.

The EPA discussed concerns relating to SSOs in detail with the Director and inquired about each program listed above to determine whether a formal or non-formal (not in writing) program existed to manage various maintenance and operations needs of the WCTS.

The City has its WCTS mapped in a GIS-based map that displays sewer pipe and manhole locations. The EPA did not examine the details of the GIS mapping system or what data is maintained in the GIS system except for sewer pipes and manhole locations. The City does not have an advanced GIS add-on to track detailed sewer data.

The City has also developed and implemented a SORP-like document in two separate documents titled "Emergency Response and Contingency Plan" and the "Bypass and Sanitary Sewer Overflow Reporting and Follow-up" documents. These documents include information on responding to and cleaning up an SSO, notification to MDEQ procedures, available equipment, and important contact information. These documents were not closely evaluated during the inspection but they were approved by MDEQ as a product of a previous Agreed Order between the City and MDEQ. These documents do not include guidance on estimating SSO volume.

The City has two jetter-trucks and crews. The City also has three trailer mounted bypass pumps, one camera truck, a hand-held camera, excavation and trenching equipment, spare pipes, manhole structures and fittings to respond to SSOs and perform necessary structural repairs.

The City has 66 pump stations throughout the WCTS. Of the 66 pump stations, none of the pump stations have onsite emergency back-up power. The City has three trailer mounted pumps, one or two portable emergency generator used for emergency pump station operations. The City does not appear to have formal written preventive maintenance or

operations programs, but the City demonstrated that they have a routine pump station inspection program and perform maintenance as needed.

The City does not have a formal CSSAP. The City is performing pieces of a typical CSSAP, such as periodic wet well and manhole inspections.

The City does not have any formal, written preventive maintenance programs for maintenance of the WCTS.

The City does not have a formal capacity assurance program to ensure adequate capacity in the system for new sewer connections.

The City has no formal written FOG program; however, the Public Works Department is authorized to inspect grease traps. The City's Sewer Use Ordinance sets the effluent standard for grease concentrations to be 100 mg/l maximum, businesses that exceed that concentration requires a grease interceptor or grease trap. The Public Works Department did not present any formal grease trap inspection schedule or program. The City's Line Superintendent stated that approximately 75% of the City's SSOs originate from grease related blockages.

The City has a rudimentary customer complaint system and procedures that rely on the initiation of paper work orders within the Public Works office to respond to, and address customer complaints during normal business hours. The Public Works call-in number is publicized on the City's website. Outside of normal business hours, complaint calls are received at the Drinking Water Plant. Paper work orders are entered into a basic database software system (IBM AS400 software) to track and maintain basic records; however, there are no established procedures to maintain the original customer complaint record and the database being used to track work orders is old and rather antiquated for a City of this size. Weekly reports are routed to the Director for review and copied to the Mayor and City Council.

**B. SSO Observations**

Discharges to waters of the United States from sanitary sewer systems are prohibited unless authorized by an NPDES permit. In addition, overflows from the sewer system that do not reach waters of the United States can be indicative of a failure to comply with the proper operation and maintenance provisions of City's permits.

An examination of the information submitted to the EPA from a concerned citizen indicated that the City is experiencing SSOs in various locations, most of which appeared to be occurring along a major trunk line that runs alongside of Sowashee Creek. This portion of the City's WCTS provides flow to the South Plant. Figure 1 shows the approximate locations of the SSOs reported via citizen's complaint.

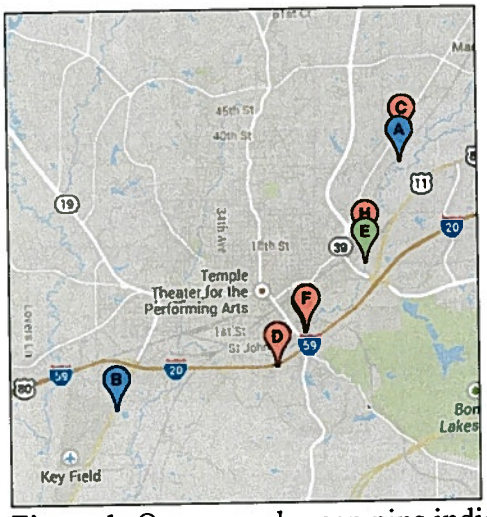


Figure 1. Orange and green pins indicate SSO locations, blue pin A is the East Plant, blue pin B is the South Plant.

Figures 2 through 6 are SSO locations discovered on April 8th and April 9th.

Figure 2. An SSO located on Sowashee Drive occurring on April 8, 2014. The ditch was dug by an unknown citizen, not the City (according to the City), and diverts flow from the manhole directly into a tributary creek of Sowashee Creek. The flow from the SSO would have entered the creek without the ditch. The EPA discovered three manholes on Sowashee Drive that were actively discharging.

Figure 3. This manhole is also located on Sowashee Drive and is one manhole upstream of the manhole in Figure 2. This manhole was uncovered on April 9, 2014. The surcharged condition of this manhole is 6 inches from the lid. Massive root build-up at the crown is evident.

Figure 4. An active SSO located next to Sowashee Creek behind businesses near 108 U.S. Hwy 80 on April 8, 2014. The inspection team returned to this sight with MDEQ and the City and noted that the pipe was still surcharged to the top of the manhole on April 9, 2014.


Figure 5. This is the same manhole pictured in Figure 4. This manhole experienced enough pressure to blow the manhole lid off of the crown (arrow) and flows often enough, and strong enough to cut a substantial open channel to Sowashee Creek. Multiple manholes along this stretch of pipe had misplaced (but not blown off of the crown) manhole lids.

Figure 6. This SSO was observed on April 8, 2014 on the service road leading to the East Plant. The inspection team did not revisit this site with MDEQ or the City.

## C. WWTP Observations

The EPA performed a Reconnaissance Inspection on April 9, 2014, accompanied by MDEQ and the Lead Plant Operator for the South Plant. The following are observations noted during inspection. The South Plant is a conventional activated sludge treatment plant. The South Plant consists of the originally designed activated sludge treatment system (the "old side") and a newer activated sludge system (the "new side") that is larger than the original design. Both treatment systems have separate biological treatment trains, including separate chlorine contact chambers, the flow from both treatment trains are blended together before the outfall.

The Mixed Liquor Suspended Solids (MLSS) in the aeration basins appeared to be thin, meaning that the biomass to liquid ratio was low (Figure 7). The Lead Operator stated that the MLSS is about 2500 mg/L. Normal range for this type of plant ranges from 2000 to 4000 mg/L, depending on the individual plant characteristics. 2500 mg/L is within acceptable book limits; however, low MLSS concentrations can lead to permit limit exceedances and it is unclear whether this plant can operate efficiently at 2500 mg/L.

Figure 7. Aeration basins. The MLSS was thin and light brown in appearance.

A "sludge judge" was inserted into Clarifier 1 to measure the sludge blanket levels. The sludge judge measured a low sludge blanket (Figure 8). The Lead Operator stated that he had wasted solids the day before. Nominal sludge depth is determined on a case-by-case basis, but this low of a blanket is indicative of recent wasting operations.

Figure 8. A sludge judge was used to measure sludge blanket depth in Clarifier 1. Sludge depth appeared to be less than one foot in depth.

The inspection team noted several operation and maintenance issues throughout South Plant. The surface skimmers used to remove floating debris for all of the clarifiers have been removed. Removing these skimmers may not have a significant operational impact on the quality of the effluent, but solids floating in the clarifier and algae blooms reported to regularly occur during hotter seasons can cause wear and tear on the equipment. The weir for Clarifier 2 is dysfunctional and short circuiting the system (Figure 9). This type of weir separation was noted on more than one location in Clarifier 2. Significant algae build up was noted on all of the clarifier weirs.

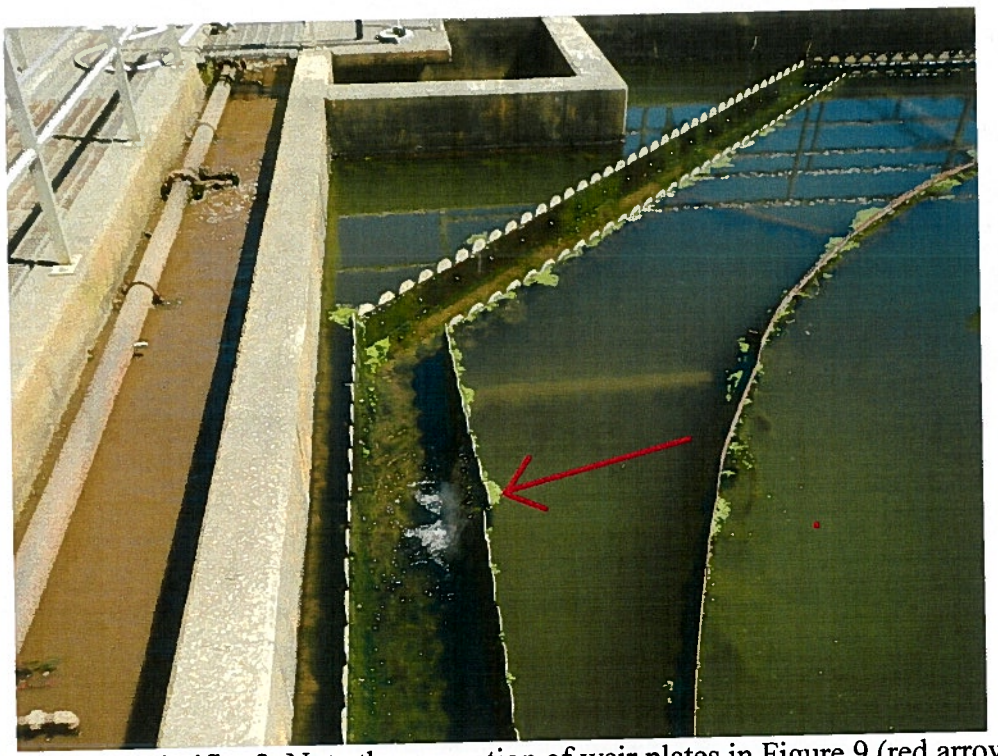

Figure 9. Clarifier 2. Note the separation of weir plates in Figure 9 (red arrow).

The inspectors noted a Return Activated Sludge (RAS) line that is broken above the aeration basin on the "new side" of the plant (Figure 10). The RAS discharging a portion of its flow above the basin may not be affecting the operations of the system, but it is indicative of improper operation and maintenance.

Figure 10. Aeration basin with dysfunctional RAS line.

The inspectors noted that the clarified effluent entering and exiting the chlorine contact chamber on the "new side" was significantly turbid (Figure 11). The flow entering and exiting the "old side" was much less turbid, but not clear.

Figure 11. Chlorine Contact Chamber for the "new side". Flow exiting the chamber was notably turbid and had an unclean appearance.

**D. Conclusion**

The City's personnel were courteous and appear knowledgeable about the system; however, there are some significant deficiencies noted above. The City has not developed and implemented many formal MOM programs, even though they are currently performing some of the work inclusive of the MOM programs.

The City maintains that they have knowledge of the systems wet weather capacity deficiencies. The Director stated that a pump station project is planned to redirect some to the flow that is impacting the length of pipe experiencing SSOs along Sowashee Creek to the East Plant, but the City did not provide supporting evidence that this addition will eliminate the SSOs. Deficiencies noted above are indicative of a Public Works that appears to be undermanned, underfunded and ill-equipped to properly operate and maintain a publically owned treatment system of this size and magnitude. The inspectors noted sewer manholes that were immersed in water (Figure 12 below), manhole crowns displaced from the main structure, manhole lids blown off of the crown, broken major components at the South Plant, all in the measure of less than 10 hours of inspection.

Figure 12. Manhole immersed in water.

The City should immediately take steps to address the wet weather issues in the system and repair damaged components at the South Plant. A thin MLSS at the South Plant may also be indicative of excessive Inflow and Infiltration (I/I) being introduced into the treatment process causing a low MLSS and turbid effluent. The City should immediately take steps to assess the WCTS for excessive I/I that are contributing to the wet weather SSOs and to the likelihood of excessive I/I being introduced into the WWTP.

The City should also update their software for tracking complaints and work order to better maintain records required of the regulatory community and to allow for more efficient trend analysis of the system, among other advantages. The City stated that 75% of the SSOs that occur in the system are FOG related. Given that the known wet weather SSOs are significant in number and volume, the EPA must assume that FOG related SSOs are a significant

problem causing SSOs within the City.

### 1. Management, Maintenance and Operations Programs

The EPA noted some preventive maintenance procedures that the City is utilizing that are in keeping with best management practices to operate and maintain the system; however, the EPA has some major concerns with regard to the City's FOG program, Capacity Assurance Program, Continued Sewer Assessment Program, Infrastructure Rehabilitation Program and other programs that should be formally adopted to properly operate and maintain this size of system. The EPA recommends that the City develop formal written programs for these preventive maintenance procedures and programs. Developing formal written programs will aid the City in refining these programs, which should increase efficiency of the programs and provide guidance for the implementation of these programs that can be passed down to the next maintenance generation.

MOM Program development guidance documents can be found on EPA, Region 4's website at http://www.epa.gov/region4/water/wpeb/momproject/. Recommended MOM programs include:

#### a. Mapping Program

Formal Mapping Program documentation should be developed to ensure consistency of map protocol and to provide official guidance for map review and maintenance. The existing GIS program should be expanded to include more sewer specific configuration data and maintenance tracking data such as pipe cleaning and inspection.

#### b. Grease Control Program

The EPA recommends that the City develop documents that outline procedures and provide guidance on how to manage and reduce FOG build-up in the WCTS. A valid FOG program includes providing guidance documents for permitting, inspection, enforcement, compliance tracking, budgeting, establishing inspection priorities, public education guidance and performance goals and provide specific grease control obligations for food service establishments in accordance with City ordinances. Formal FOG program development should include a review of the City's ordinances to ensure that the appropriate Public Works personnel have the ability to adequately enforce FOG related ordinances.

#### c. Capacity Assurance Program

The EPA recommends that the City develop a formal Capacity Assurance Program that includes specific criteria for approval of additions to the system balancing Permit requirements and the City's codes and ordinances; performance measures used to approve or deny an extension of the collection system; and procedures used to

calculate capacity in the collection system and at the treatment plant.

**d. Preventive Maintenance and Inspection Programs**

The EPA recommends that the City develop formal written MOM Programs with aggressive preventive maintenance, inspection and rehabilitation programs that define goals for cleaning, inspection, rehabilitation, preventive maintenance activities, including:

A **Gravity Line Preventive Maintenance Program**. The Gravity Line Preventive Maintenance Program should include the following components: 1) blockage abatement mechanisms (including both hydraulic and mechanical cleaning); 2) root control mechanisms; 3) debris control mechanisms, and 4) manhole preventive maintenance procedures. This program should include the following activities: 1) identification of, and provision for, all personnel and equipment needed; 2) determination of the frequency; 3) establishment of procedures; 4) establishment of priorities for scheduling; 5) the use of standard forms; 6) establishment of record keeping requirements; 7) establishment of performance measures; and 8) integration of all data collected under the program with other information management systems.

A **Continuing Sewer System Assessment Program (CSSAP)**. The CSSAP should establish procedures for setting priorities and schedules for undertaking the WCTS assessment including: 1) corrosion defect identification; 2) routine manhole inspections; 3) flow monitoring; 4) CCTV activities; 5) gravity system defect analysis; 6) smoke testing, and; 7) pump station performance and adequacy analysis. The CSSAP should provide for the assessment of at least ten percent (10%) of the WCTS on average per year, resulting in the assessment of the entire WCTS at least once every ten years, and establish priorities and schedules taking into consideration the nature and extent of customer complaints; flow monitoring; location and cause of SSOs and WCTS deficiencies; any remediation work already ongoing; pump station run times; field crew work orders; any preliminary sewer assessments, such as flow monitoring results; community input; and any other relevant information.

A **Infrastructure Rehabilitation Program (IRP)**. The IRP should establish procedures for setting priorities and schedules for undertaking rehabilitation of the WCTS. The IRP should address Infiltration/Inflow (I/I), structural issues in the WCTS, and the other conditions causing SSOs, with the goal of eliminating future SSOs. The IRP should take into account all previous information the City has gathered including any information gathered pursuant to the CSSAP. The IRP should also establish standard procedures to analyze the effectiveness of completed rehabilitation projects.

A **Pump Station Operations and Preventive Maintenance Program**. The Pump Station Operation and Preventive Maintenance Program should include or address the following items/components described below:

i. Pump station operations at pump stations that are to be conducted on a routine, scheduled basis. The program should define the standard pump station operating procedures to be followed at each pump station such as reading and recording information from the elapsed time meters, recording information from the pump start counters, observing wet well conditions and grease accumulation, checking and re-setting, as necessary to improve system performance, wet well set points, checking and recording system pressure, checking SCADA components, checking alarms and stand-by power and identifying maintenance needs.

ii. Emergency pump station operations procedures. The program should address pump station operations at pump stations that are to be conducted as a result of equipment failure or loss of electrical power. The program should define the emergency pump station operating procedures to be followed at each pump station such as calling for emergency maintenance, initiating stand-by power by bringing in portable generators or initiating portable pump operations for pump around.

iii. The program should establish schedules, routes, priorities, standard forms and reporting procedures and establish minimum acceptable performance measures and condition grading criteria.

Preventive maintenance and inspection programs can have a significant positive impact on the future condition of the WCTS. A properly implemented preventive maintenance, inspection and rehabilitation programs can prevent a massive outlay of expenses needed to repair or replace parts of the system that City personnel 'did not see' failing due to the lack of prevention. Relatively small preventive maintenance expenses now can save the City larger repair expenses in the future. Formal guidance can also be used to educate City officials, such as the Mayor and City Council responsible for funding decisions and the allocation of resources essential to proper operation and maintenance of the utility.

**e. Sewer Overflow Response Plan**

The EPA recommends that the City update its existing SORP to include procedures for estimating SSO volumes.

# ENCLOSURE B

## NPDES Permits Effluent Limit Exceedances

| South WWTP - MS0020117 | | | | | |
|---|---|---|---|---|---|
| **Violation Type** | **Violation Information** | **Violation Code** | **Violation Date** | **RNC Detection Code-Date** | **RNC Resolution Code-Date** |
| Single Event Violation | D0011 Permit Violations - Discharge Without a Valid Permit | D0011 | 3/15/2010 | J-03/15/2010 | 8-08/30/2010 |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C2 | E90 | 4/30/2009 | | |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C2 | E90 | 8/31/2009 | X-09/14/2009 | 9-09/28/2009 |
| Effluent Violation | 001 N 00300 Oxygen, dissolved [DO] Effluent Gross Season ID:0 C1 | E90 | 9/30/2009 | X-10/22/2009 | 9-10/22/2009 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 9/30/2009 | T-10/31/2009 | 2-07/31/2010 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 9/30/2009 | X-10/22/2009 | 9-11/02/2009 |
| Effluent Violation | 001 N 00300 Oxygen, dissolved [DO] Effluent Gross Season ID:0 C1 | E90 | 10/31/2009 | | |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 10/31/2009 | T-10/31/2009 | 2-07/31/2010 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 10/31/2009 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C2 | E90 | 11/30/2009 | T-04/30/2010 | 3-08/30/2010 |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C3 | E90 | 11/30/2009 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 C3 | E90 | 12/31/2009 | | |
| Effluent Violation | 001 N 74055 Coliform, fecal general Effluent Gross Season ID:0 C2 | E90 | 12/31/2009 | | |
| Effluent Violation | 001 N 74055 Coliform, fecal general Effluent Gross Season ID:0 C3 | E90 | 12/31/2009 | | |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 1/31/2010 | T-01/31/2010 | 2-07/31/2010 |

| South WWTP - MS0020117 | | | | | |
|---|---|---|---|---|---|
| **Violation Type** | **Violation Information** | **Violation Code** | **Violation Date** | **RNC Detection Code-Date** | **RNC Resolution Code-Date** |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 1/31/2010 | | |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 2/28/2010 | | |
| Effluent Violation | 001 N 74055 Coliform, fecal general Effluent Gross Season ID:0 C2 | E90 | 2/28/2010 | | |
| Effluent Violation | 001 N 74055 Coliform, fecal general Effluent Gross Season ID:0 C3 | E90 | 2/28/2010 | | |
| Effluent Violation | 001 N 81010 BOD, 5-day, percent removal Percent Removal Season ID:0 C1 | E90 | 2/28/2010 | | |
| Effluent Violation | 001 N 81011 Solids, suspended percent removal Percent Removal Season ID:0 C1 | E90 | 2/28/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 Q2 | E90 | 3/31/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 C2 | E90 | 3/31/2010 | V-06/30/2010 | 3-08/30/2010 |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 C3 | E90 | 3/31/2010 | | |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 3/31/2010 | T-03/31/2010 | 2-07/31/2010 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 3/31/2010 | | |
| Effluent Violation | 001 N 74055 Coliform, fecal general Effluent Gross Season ID:0 C3 | E90 | 3/31/2010 | | |
| Effluent Violation | 001 N 81010 BOD, 5-day, percent removal Percent Removal Season ID:0 C1 | E90 | 3/31/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 Q2 | E90 | 4/30/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 C2 | E90 | 4/30/2010 | T-06/30/2010 | 3-08/30/2010 |

| South WWTP - MS0020117 | | | | | |
|---|---|---|---|---|---|
| **Violation Type** | **Violation Information** | **Violation Code** | **Violation Date** | **RNC Detection Code-Date** | **RNC Resolution Code-Date** |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:1 C3 | E90 | 4/30/2010 | | |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 4/30/2010 | T-04/30/2010 | 2-07/31/2010 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 4/30/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 Q2 | E90 | 5/31/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C2 | E90 | 5/31/2010 | V-06/30/2010 | 3-08/30/2010 |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C3 | E90 | 5/31/2010 | | |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 5/31/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 Q1 | E90 | 6/30/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 Q2 | E90 | 6/30/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C2 | E90 | 6/30/2010 | T-06/30/2010 | 5-11/26/2012 |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C3 | E90 | 6/30/2010 | | |
| Effluent Violation | 001 N 00400 pH Effluent Gross Season ID:0 C1 | E90 | 7/31/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 Q2 | E90 | 7/31/2010 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C2 | E90 | 7/31/2010 | T-07/31/2010 | 5-11/26/2012 |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C3 | E90 | 7/31/2010 | | |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C2 | E90 | 6/30/2012 | X-07/19/2012 | 9-09/05/2012 |

South WWTP - MS0020117

| Violation Type | Violation Information | Violation Code | Violation Date | RNC Detection Code-Date | RNC Resolution Code-Date |
|---|---|---|---|---|---|
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 6/30/2012 | X-07/19/2012 | 9-09/05/2012 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 6/30/2012 | X-07/19/2012 | 9-09/05/2012 |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C2 | E90 | 10/31/2012 | Y-11/19/2012 | 9-11/26/2012 |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C3 | E90 | 10/31/2012 | X-11/19/2012 | 9-11/26/2012 |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C2 | E90 | 12/31/2012 | Y-01/17/2013 | 9-04/02/2013 |
| Effluent Violation | 001 N 01119 Copper, total recoverable Effluent Gross Season ID:0 C3 | E90 | 12/31/2012 | Y-01/17/2013 | 9-04/02/2013 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C2 | E90 | 12/31/2012 | Y-01/17/2013 | 9-04/02/2013 |
| Effluent Violation | 001 N 50060 Chlorine, total residual Effluent Gross Season ID:0 C3 | E90 | 12/31/2012 | Y-01/17/2013 | 9-04/02/2013 |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C3 | E90 | 9/30/2013 | | |
| Effluent Violation | 001 N 00610 Nitrogen, ammonia total [as N] Effluent Gross Season ID:0 C2 | E90 | 11/30/2013 | X-01/15/2014 | 9-02/11/2014 |
| Effluent Violation | 101 A 50060 Chlorine, total residual Effluent Gross Season ID:0 C1 | E90 | 12/31/2013 | X-01/25/2014 | 9-02/14/2014 |

| East WWTP - MS0055735 | | | |
|---|---|---|---|
| **Violation Type** | **Violation Information** | **Violation Code** | **Violation Date** |
| Effluent Violation | 001 A 01114 Lead, total recoverable Effluent Gross Season ID:0 C2 | E90 | 9/30/2009 |
| Effluent Violation | 001 A 00310 BOD, 5-day, 20 deg. C Effluent Gross Season ID:0 Q2 | E90 | 6/30/2011 |
| Effluent Violation | 001 A 00310 BOD, 5-day, 20 deg. C Effluent Gross Season ID:0 C3 | E90 | 6/30/2011 |
| Effluent Violation | 001 A 00400 pH Effluent Gross Season ID:0 C3 | E90 | 6/30/2011 |
| Effluent Violation | 001 A 00400 pH Effluent Gross Season ID:0 C3 | E90 | 7/31/2011 |
| Effluent Violation | 001 A 00400 pH Effluent Gross Season ID:0 C3 | E90 | 9/30/2011 |
| Effluent Violation | 001 A 00310 BOD, 5-day, 20 deg. C Effluent Gross Season ID:0 C3 | E90 | 10/31/2011 |
| Effluent Violation | 001 A 00530 Solids, total suspended Effluent Gross Season ID:0 C2 | E90 | 2/29/2012 |
| Effluent Violation | 001 A 81011 Solids, suspended percent removal Percent Removal Season ID:0 C1 | E90 | 2/29/2012 |